

1 Strange hadron production in O+O collisions at
2 $\sqrt{s_{NN}} = 200$ GeV at STAR

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4 Strangeness enhancement was the first predicted observable as evidence of
5 the formation of a Quark-Gluon Plasma (QGP) in the 1980s. Since then results
6 from high energy collisions of asymmetric small systems (p +Au, p +Pb, etc.),
7 such as flow and enhancement of strangeness production, have generated sig-
8 nificant discussions in the field about the initial conditions, including the size
9 of the system, needed to generate a QGP. A smooth increase in the ratio of
10 strange hadron production to the pion yield as a function of multiplicity has
11 been found in various collision systems (p + p , p +A, A+A). In 2021, STAR col-
12 lected large datasets during $\sqrt{s_{NN}} = 200$ GeV O+O collisions at RHIC, a unique
13 symmetric small collision system which allows a more straightforward geome-
14 try mapping with centrality than those asymmetric small system collisions like
15 He+Au, d+Au, or p +Au. This talk will focus on the first measurements of
16 bulk strange hadron ($\Lambda, \bar{\Lambda}, \Xi, \bar{\Xi}, \Omega, \bar{\Omega}$) production in $\sqrt{s_{NN}} = 200$ GeV O+O
17 collisions. With the high statistics of the dataset and the extended kinematic
18 coverage benefit from the iTPC upgrade, we can investigate the dependence
19 of strangeness production in O+O on transverse momentum, centrality, and
20 rapidity.